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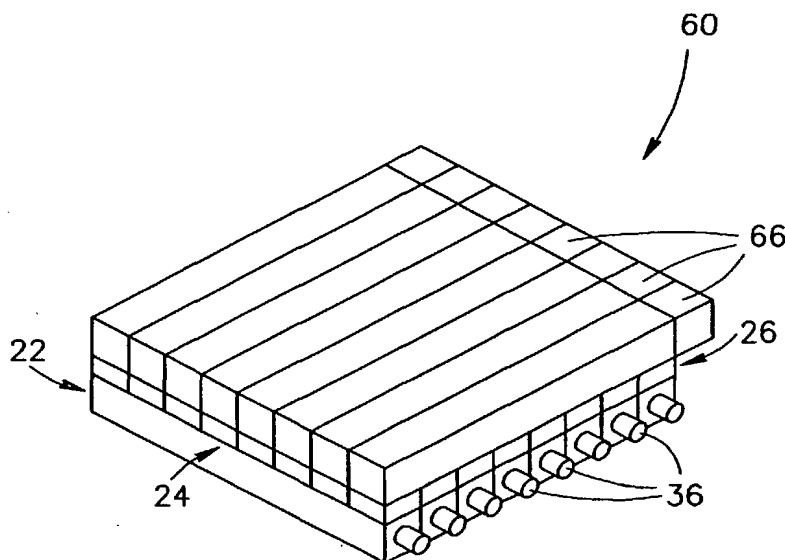
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(54) Title: **OPTICAL LINEAR PROCESSOR**



(57) Abstract: An optical signal processor for transforming a first vector into a second vector comprising: a plurality of linear light sources each of which provides light having an intensity responsive to a different component of the first vector; a spatial light modulator comprising a plurality of modulation zones each of which zones receives light from substantially only one of the light sources and transmits light in proportion to a transmittance that characterizes the modulation zone; and at least one light detector for each component of the second vector that receives light transmitted from a plurality of modulation zones, each of which is illuminated by light from a different light source, and generates a signal responsive to the received light that represents a component of the second vector.

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